



# Raw Material Assessment and Production Cost Analysis- Chitosan

Case Study

# Case study: Business case and solution

Chitosan

<b>Client</b>	A global chemical company
<b>Industry</b>	Paper & pulp
<b>Products</b>	Bio-based chemical

## Engagement Scope

1

### Raw material Market Overview

- Identify different raw materials used for production of chitosan/chitin; Highlight the development stage for each raw material
- Perform in depth assessment of raw material for production of chitin/chitosan
- Parameters for raw material assessment: volume, availability, seasonality, location, sustainability, purity, form and pricing

## Context

- Client currently has very limited bio-based chemical offerings for customers in the domain of paper & pulp. As part of their initiative to introduce bio-based products, Client is interested in exploring opportunities which exists in this space by analyzing the available/under research chitosan based chemistries, and its raw material availability aspects.

## Key Business Questions

- What different types of raw materials are used to manufacture chitosan? What is the stage of development of such raw materials, other than crustacean shell waste? Where are the major supply/demand centers located?
- What are the challenges for using shell waste for the development of chitosan? Does the industry foresee hurdles due to trade-offs between raw material usage? How are the various commercially used raw materials priced? Does it vary regionally, and seasonally?
- How do suppliers/buyers negotiate volume and price terms? What is the product cost of chitosan from these raw material?

2

### Production cost analysis

- Identify different production processes used for chitin/chitosan production; highlight the development stage for each raw material
- Perform production cost analysis for commercially used production process
- Production cost analysis involve:
  - Raw material cost
  - Processing cost
  - Capital cost, etc.

3

### Key Findings and Conclusions

- Identified market opportunities and application areas of chitosan in the Europe, Americas, Asia and Oceania.
- Prepared cash cost curve for various region for different supply routes thus uncovering all the cost elements such as Single/Multi region cost models, etc.

# Case study: Methodology and benefits to client

Chitosan

## Research Methodology

### Secondary Research

- Referred Industry portals, company webpages, Databases (Factiva, Hoovers, etc.)/ associations, market/ industry reports, magazines to gain understanding on availability and variation of different raw materials used for chitosan production
- Analyzed scientific articles and patents by referring paid databases like Thomson Innovation, Espacenet, WOS, PubMed, Science direct, etc. to identify chitosan manufacturers/shrimp processors.

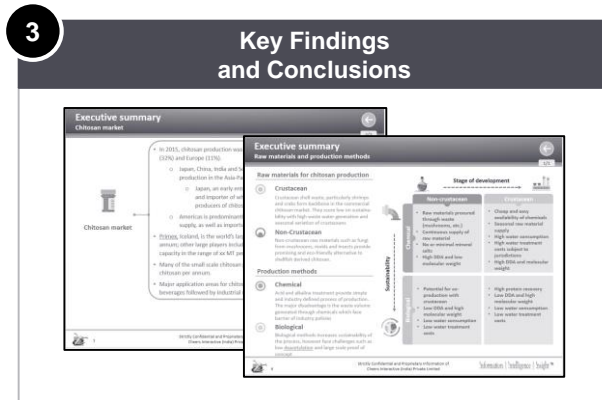
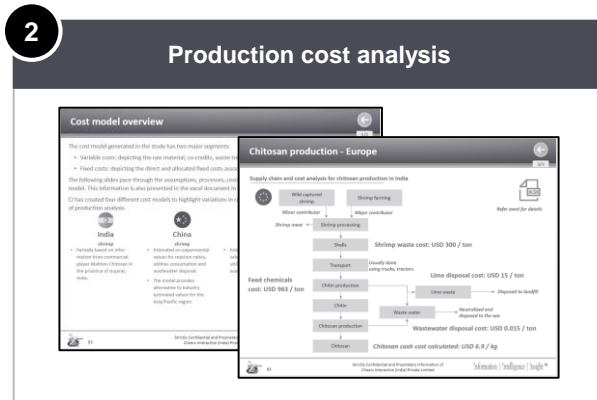
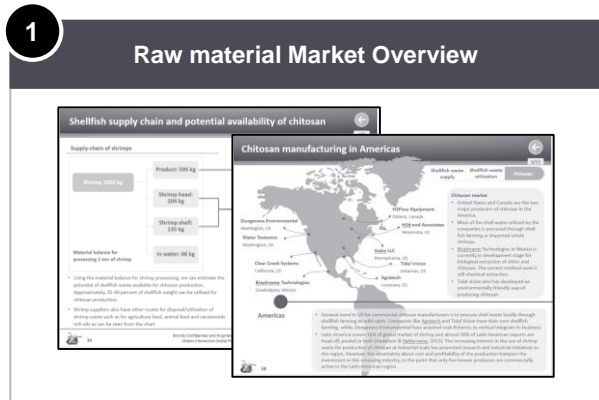
### Primary Research

- Conducted 10+ telephonic interviews with the chitosan manufacturers or seafood processor or raw material supplier to gather information around the required parameters

## Benefits to Client

- Helped client in gaining understanding about price, supply chain and availability of raw materials that are being used for Chitosan production for different geographies
- Highlighted factors that have impact on the availability and prices of raw material for different geographies
- Provided multi region production cost analysis of chitosan from various raw materials and highlighted the development stage of each raw material
- Highlighted key factors impacting the cost of production of Chitosan

## Sample Analysis



# Thank you

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